



What the Dentist can Learn from the Dancer: the Impact of Laban Movement Analysis on Dentistry

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Abstract

In a summer internship at my father's pediatric dental office, I connected key elements of my knowledge as a dancer—specifically Laban Movement Analysis—with a respected health profession. Noting that dental practitioners' limited, static movements appeared to hinder their work performance, I drew upon the concepts of BESS (Body, Effort, Shape, and Space), and extant literature to design a prototype for a dental practitioner-specific exercise regimen. Based upon the universally professionally accepted standard of dance warm-up and technical preparation in the field of dance, I sought to create an analogous regimen appropriate to the specific needs of the dental practitioner. Research has shown that an allocation of 2-3 minutes of breathing exercises and targeted stretches prior to patient care prepare the working muscles of the dental practitioner. According to Valachi (2018), specific breathing exercises activate the peripheral nervous system and help ease work-related injuries, such as back pain; while chairside stretches performed during any dental procedure reduce pain, improve the operator's posture, and reduce muscle tightness. Targeted strengthening exercises can also aid in injury prevention by “maintaining optimal postures in prolonged, static postures” (Valachi, 2018). It appears that consistent practice of a specifically targeted exercise regimen designed for dental practitioners has the potential to prevent work-related musculoskeletal disorders and contribute to happy, healthy, and meaningful days on the job and a long career unplagued by work-related injury. The prototype I have designed is my significant first step to show the impact of Laban Movement Analysis on Dentistry.

Keywords: Laban Movement Analysis, Bartenieff Fundamentals, Dental Practitioners, Passive Warm Up

Introduction

As a dancer, from taking technique from the class to performing on stage, I begin with a warm-up. The significance of warming-up before exercise has been impressed upon me since my very first dance class. Noticing the stiff, limited movements of the dental practitioners at my father's dental office, this inspired me to apply the wisdom of dance to the work day of dental practitioners. I considered the importance of warm-up, and the dance-specific and related techniques, that allow a professional to dance healthfully on a daily basis and over time to create a career in the field. I decided to create a prototype of an analogous healthful body practice for the dental practitioner. Using the tools of Laban Movement Analysis, I designed an exercise

regimen specifically for the dental practitioner to contribute to their happy, healthy, and meaningful work on the daily basis and, importantly, long term.

Dancers warm up—why not dentists?

Warm-up techniques can be categorized as either passive or active: “passive warm up involves raising muscle or core temperature by some external means, while active warm up utilizes exercise” (Bishop, 2012). Warm up is critical to performance and injury prevention in dance which uses both types of warm-up. Considering the precise, fine motor skills of dental practitioners, the use of a passive warm-up would be appropriate because “passive heating allows one to obtain the increase in muscle or core temperature achieved by active warm up without depleting energy substrates” (Bishop, 2012).

Before dental practitioners begin their performance of particularly strenuous poses onto the body, they should allot two-three minutes before working in order to stretch and prepare their body for the day. Chairside stretches also fall into the category of passive warm-ups. Consistency in enduring a passive warm-up will allow for muscles to build and eventually provide ease and unnecessary tension to the bodies of dental practitioners.

Dancers consciously use breath to improve performance—how about dentists?

The way humans breathe is often left unnoticed by most people because breathing is one of the body's involuntary actions. In dance, however, we use breath purposely and mindfully to improve warm up, technical execution, ensemble work, and many aspects of performance. However, the way dental practitioners breathe while working on patients could resolve their bodies' source of pain. According to Dr. B Valachi, specific breathing activates the peripheral nervous system. There are also two different types of breath: chest (shallow) and belly (deep). Shallow breathing results from a slouched posture and stress. Chest or shallow breathing could also worsen muscle imbalances, while decreasing the supply of oxygen. Belly or deep breathing actually strengthens the core by allowing the body to correctly use the diaphragm. Belly breathing occurs naturally in sleep and increases the body's oxygen consumption (Valachi, 2018); yet many people do not carry belly breathing into their waking hours without explicit training to do so.

Dancers build specific strengths—how about dentists?

Dancers' specific strengths, including muscular endurance, to improve performance which also prevent injury. In order to build muscular endurance, dental practitioners need to implement strength exercises at least three times a week. Power training consists the utilization of a TheraBand, targeting the postural muscles of the back and shoulders. Dentists with better muscular endurance of back/shoulder girdle will experience less pain. Endurance training also targets deep postural stabilizing muscles, which is essential for preventing injuries (Valachi, 2018).

Dancers strive to use their bodies mindfully and efficiently and they hone the tools to do so— how about dentists?

Not unlike dancers, understanding of the Bartenieff Fundamentals and BESS would allow for dental practitioners to perform their work with more ease, efficiency, and comfort. The concept of the Bartenieff Fundamentals “deals with patterning connections in the body according to principles of efficient movement functioning with a context which encourages personal expression and full psychophysical involvement” (Hackney, 2005). Informing dental practitioners about the variations that their body, effort, shape, and space can bring about would also produce more meaningful work. The idea of utilizing the concepts of both the Bartenieff Fundamentals and BESS should introduce to dental practitioners that their bodies are able to change patterns to create a safer, healthier work practice.

Methods

Participants

I observed a pediatric dentist, my father, and nine female dental assistants. The dental practitioners range in age from 25-50- years-old and work in a busy dental practice office in Orlando, Florida.

Materials

I used the following bibliographic sources: *Making Connections* by Peggy Hackney and *Highway to Health: A Roadmap to Self-Managing Your Work-Related Pain* conference sheets by B. Valachi.

Design

The independent variables were the age of the participants and their understanding of Laban Movement Analysis, BESS and the Bartenieff Fundamentals. The dependent variable was the work performance after the application of Laban Movement Analysis, BESS and the Bartenieff Fundamentals.

Procedure

After gaining more dance knowledge through my Laban Movement Analysis course, I traveled to my father's pediatric dental office in Orlando, FL. Planning to attend one full workday (8:30 a.m.-5 p.m.) in mid-November 2018, I asked the pediatric dentist and dental assistants for consent before observing their movements and work performance. I also followed up with questions where needed. The workday consisted of a list of different procedures which included regular six-month cleanings, application of sealants, fillings for tooth decay and extractions. After completion of the workday, I asked the participants if they considered warming up before working; and specifically, where they felt pain, if any. I documented their answers into a notebook, and one participant showed me a textbook from her dental assistant training entitled *Modern Dental Assisting*. I noticed lack of any mention of a warm-up before working nor of any exercise regimen, which inspired me further to create an exercise regimen specifically designed for dental practitioners.

Discussion/Conclusion.

Dental practitioners can learn from dancers' mindful, purposeful, and informed approach to the use of the body. More specifically, the quality of life and work can be positively impacted for dental practitioners through the utilization of a passive warm-up, conscious use of breath, chairside exercises, strength training and the concepts of the Bartenieff Fundamentals and BESS. Adopting these body practices will allow dental practitioners to work more healthfully, meaningfully and comfortably over time.



Figure 1: Neck and Shoulder Combo

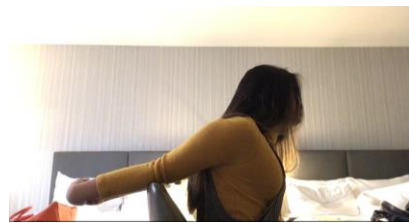


Figure 2: Pectoralis Stretch

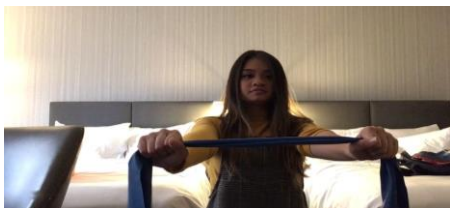


Figure 3: Scalene Stretch



Figure 4: Trapezius Stretch

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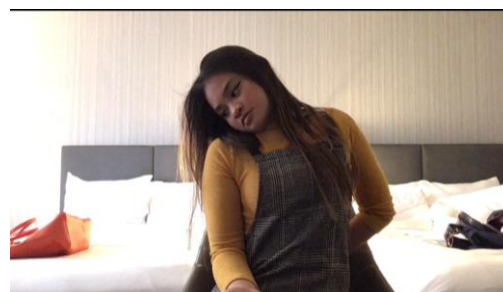


Figure 5: Power Stretches with Theraband. (Valachi, 2018)

Days: Monday, Wednesday, Friday	Before Work	Lunch Break (One chairside stretch before lunch, one chairside stretch after lunch)	After Work
	<p><u>Breath:</u> 3 deep breaths before beginning work.</p> <p>Place four fingers one-finger-length above the hip and feel how each exhale includes a contraction.</p>	<p><u>Pectoralis Stretch:</u> Clasp fingers behind back and stretch arms from behind. Hold for 3 breath cycles. Repeat exercise on the opposite side.</p>	<p><u>Breath:</u> 3 deep breaths before beginning work.</p> <p>Place fingers one-finger-length above the hips and feel how each exhale includes a contraction.</p>
	<p><u>Stretch Neck:</u> Look right/left in a “no” motion until a full stretch is felt (hold for 2 breath cycles)</p> <p>Look up/down in a “yes” motion until a full stretch is felt (hold for 2 breath cycles).</p> <p>Circle the head toward the right and left two times each.</p>	<p><u>Trapezius Stretch:</u> Hold one hand behind back and lean head toward the opposite side (ear to armpit) Hold for 3 breath cycles. Repeat exercise on the opposite side.</p>	<p><u>Power training (shoulder):</u> Grab TheraBand and have arms parallel, bent 90 degrees. Have wrists face toward the ceiling. Stretch both arms outward and hold for 5 seconds, then release. (Repeat 5 times.)</p>
	<p><u>Stretch Shoulders:</u> Shoulder shrugs: raise shoulders in an “up/down” motion. (Hold for 1 breath cycle, 3 times.)</p>		<p><u>Power training (back):</u> Stretch arms forward and grab TheraBand. Have wrists face down and stretch TheraBand by pulling outward. (Hold for 3 seconds, repeat 5 times.)</p>

	<p><u>Arm Stretch:</u> Place both arms straight above head and alternate length of stretch (“grabbing for fruit in a tree”). Hold for one breath cycle and repeat to the other side; Repeat 3 times on each side.</p> <p>Bend arm and rotate in a circle. Repeat these 3 times on each side</p>		
	<p><u>Stretch Back:</u> Contract forward, extend back. (Hold for 2-4 breath cycles, 3 times.)</p>		
	<p><u>Lateral Stretch:</u> Take one arm and place it straight overhead. Stretch over to the opposite side of that arm and make a curve with the body. Hold for 2 breath cycles; repeat on each side two times each.</p>		
	<p><u>Stretch Wrist:</u> Circle both wrists outside and then inside (5 times).</p> <p>Hold fingers and stretch the wrist back, stretch wrist forward. (Hold for 2 breath cycles, once each side.)</p> <p>Stretch fingers out until the fullest stretch is felt, then close fingers in a fist. (Hold for 1 breath cycle, repeat 3 times.)</p>		

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	<u>Massage Mandible</u> : Take both arms and massage mandible and jaw. Massage sides of neck too.		
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Days: Tuesday and Thursday	Before Work	Lunch Break (One chairside stretch before lunch, one chairside stretch after lunch)	After Work
	<u>Breath</u> : 3 deep breaths before beginning work. Place four fingers one-finger-length above the hips and feel how each exhale includes a contraction	<u>Neck and Shoulder Combo</u> : Pull arm across front of body (hold 90-degree angle) and hold in place with the opposite arm. Twist neck to the opposite side of the arm that is being pulled. Hold for 2 breath cycles then repeat exercise on the other side.	<u>Breath</u> : 3 deep breaths before beginning work. Place fingers one-finger-length above the hips and feel how each exhale includes a contraction.
	<u>Stretch Neck</u> : Look right/left in a “no” motion until a full stretch is felt. (Hold for 2 breath cycles.) Look up/down in a “yes” motion until a full stretch is felt. (Hold for 2 breath cycles.) Circle the head toward the right and left two times each.	<u>Scalene Stretch</u> : Place hand behind back of chair and tilt head to the opposite shoulder. (Hold for 2 breath cycles and repeat on the other side.)	<u>Choose two of the “Before Work” Stretches</u>

	<p><u>Stretch Shoulders:</u> Shoulder shrugs: move shoulders in an “up/down” fashion. (Hold for 1 breath cycle, 3 times.)</p>		
	<p><u>Arm Stretch:</u> Place both arms straight above head and alternate length of stretch (“grabbing for fruit in a tree”). Hold for one breath cycle and repeat to the other side; Repeat 3 times on each side.</p> <p>Bend arm and rotate in a circle. Repeat these 3 times on each side.</p>		
	<p><u>Stretch Back:</u> Contract forward, extend back. (Hold for 2-4 breath cycles, 3 times.)</p>		
	<p><u>Lateral Stretch:</u> Take one arm and place it straight overhead. Stretch over to the opposite side of that arm and make a curve with the body. Hold for 2 breath cycles; repeat on each side two times each.</p>		

	<p><u>Stretch Wrist:</u> Circle both wrists outside and then inside (5 times).</p> <p>Hold fingers and stretch the wrist back, stretch wrist forward. (Hold for 2 breath cycles, once each side.)</p> <p>Stretch fingers out until the fullest stretch is felt, then close fingers in a fist. (Hold for 1 breath cycle, repeat 3 times.)</p>		
	<p><u>Massage Mandible:</u> Take both arms and massage mandible and jaw. Massage sides of neck, too.</p>		

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